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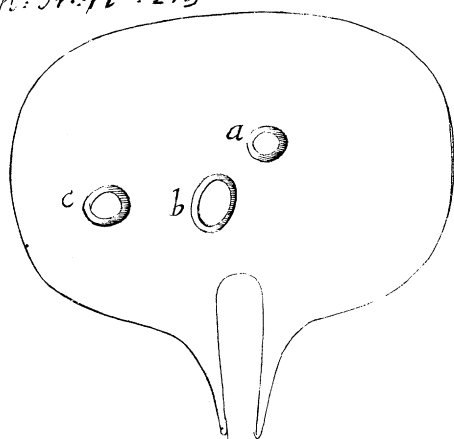
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Ph. Tr. N° 275.



II. *A Letter of Dr John Wallis, D. D. Professor of Geometry in the University of Oxford, and Fellow of the Royal Society in London; To Dr Hans Sloane, Secretary to the said Royal Society; Relating to that Isthmus, or Neck of Land, which is supposed to have joyned England and France in former Times, where now is the Passage between Dover and Calais.*

Oxford, Sept. 20. 1701.

S I R,

IN your late Transactions, No. 271. (for the Month of July, 1701.) I find you have thought fit to reprint a small *Discourse* (formerly published, but almost forgotten) with the Title of *Chartham News*, relating to the *Isthmus*, or *Neck of Land*, which is supposed to have joyned *England* and *France* (in former times) where now is the narrow pass between *Dover* and *Calais*.

The Author of this *Discourse*, I guess to have been Mr *William Somner* of *Canterbury*, a Learned Antiquary; to whom we owe the *Saxon Dictionary*, and *Saxon Grammaire*, both Printed at *Oxford* in the year 1659. His *Glossarium in Decem Scriptores Historiæ Angliæ*, published in the year 1652. And a former Treatise of *The Antiquities of Canterbury*, published in the year 1640; Whether or no any other Pieces, I am not certain. If, in this my Conjecture, concerning the *Author*, I have mistaken; I am willing to be Rectified, by any who can assure us of the truth thereof.

This Discourse being Written just before the Author's Death, and not Perfected, (as the Publisher tells us, and as doth appear in the Work itself,) was (after his Death) published by another Hand ; but, without telling us the Author's Name, or his own, (at least so far as to me appears.) However, though Imperfect, it is pity it should be lost.

He is of opinion (with Mr *Camden*, and other Antiquaries, whom he cites,) That it is highly probable (if not absolutely certain,) That *France* and *England* (or *Gaul* and *Britanny*) were anciently joyned by an *Isthmus*, or Neck of Land ; where now is the Narrow Passage between *Dover* and *Calais* : Which, many Ages since, (beyond the reach of any History now extant) was by the Seas violently beating upon it on both sides) worn away, or broken through. Whereby, what was once an *Isthmus*, is now become a *Fretum* or Narrow-Sea.

Mr *Camden* in his *Britannia* (in that Chapter where he treats of *Kent*, or *Cantium*) gives us many cogent Arguments, or Indications, which (though briefly expressed) if well considered, and taken all together, seem to me a convincing Evidence, that there had once been such a Conjunction ; but not for many Ages now past. I forbear to repeat his Arguments, because the Book is well known, (and of good Authority,) where they may be seen.

To which I may add one more (of which Mr *Camden* takes no notice in this place,) From the *Unity of Language* between the Ancient *Gauls* and *Britains* ; and from the great Intercourse between those in *Gaul*, and the *Druides* in *Britanny* ; (of which Ancient Writers take notice :) Which is not likely to have been, if there had not been an easie Communication between the one and the other. Which, though it be not a *Physical* Argument (as are those of Mr *Camden*,) is a good *Moral* Inducement, in Confirmation of them.

To those Arguments of Mr *Camden*, the Author of this Discourse adds another, of which Mr *Camden* was not aware, (as not being known in his time :) From a parcel of strange and monstrous Teeth and Bones, which (in the month of September 1668.) upon digging a Well in the Parish of *Chartham* (about three miles Southward from *Canterbury*) in the Land of Mr *John Somner* (whom I take to be a Son, or some near Relation, of Mr *William Somner*) were found at the Depth of *seventeen foot under ground*. Which Bones and Teeth (from the Figure and Greatness of them, and from the Condition of the Earth wherein they were found,) he judgeth to have been the Remainders of some *Hippopotamus*, or other large Marine Animal, which (many Ages since) had perished there; which hath since been covered with this depth of Earth. He gives us the Figure of these Monstrous Teeth; which, he says, were in a manner Petrified, and turned into Stone, (weighing each Tooth somewhat above half a pound;) and intended a like Description of the Bones; and a Map of the Country, or Draught of the Level; But Death prevented it.

This *Chartham* he observes to lye about the middle of a large rich Valley, for about twenty miles or more in Length, and of a considerable Breadth; having on each side of it, at a considerable Distance, a long Tract of Hills, or High-grounds. Through which Valley, there now runs the River *Sture*, *Stoure*, or *Esture*, for twenty miles or more, by *Ashford*, *Wye*, *Godmersham*, *Chilham*, *Chartham*, *Canterbury*, *Fordwich*, and so to *Sandwich*, where it dischargeth itself into the Sea.

This long and large Vale, (from the Situation of the Place, the Nature of the Soil, and the Remains of this Marine Animal, lodged here at so great a Depth under Ground,) he judgeth to have been (in former Ages) an *Æstuarium*, or Arm of the Sea. Into which, the Sea (being stopped by the *Isthmus*, which then joyned *France* and *England*, from the Course which now it takes,) did dis-

charge itself. Which, in process of time, being filled up; (partly by the Earth, Sand, Oase, or other matter brought in by the Sea, and lodged there; partly by the Earth washed down, or falling upon it, from the Hills on both sides;) is reduced to the Stone we now see.

I do not think it necessary to repeat at large what he alledgeth to this purpose, (because so lately printed in your Transactions:) But think it not amiss, to enforce his Argument, by considering, what must have been if this Hypothesis be true; and how it agrees with what we see.

We must first consider, That, if such an *Isthmus* had once been, where now is the Pass between *Dover* and *Calais*; the Great Seas, on both sides, must continually beat upon it, with a fierce impetuous Tyde, twice in four and twenty hours. The *Northern* Sea, between us and *Holland* (called *Oceanus Germanicus*) on the *Eastern* side: And, the *Western* Sea, between us and *France*, (called *Oceanus Britannicus*.) on the *Western* side. Which (in process of time) may well be supposed likely enough to wear away, or break through a narrow *Isthmus*.

The *Western* Tyde coming in fiercely between us and *France*, fretting on the Coast on both sides, must needs be supposed to bring with it a great deal of Earth, Sand, or Mud. But, being stopped in its Current by this *Isthmus*, did not deposit it (as might be thought) on the side of it, (which might strengthen it,) but found an opportunity of discharging itself on the spacious Level of *Romney-Marsh*; (which, as *Camden* tells us) is *Fourteen Miles in Length, and Eight in Breadth*;) fretting that *Isthmus* as it comes along: and then (at standing Water, about the Tydes recess,) letting it fall on that Level, and lodging it there: But then again, fretting that *Isthmus*, and the Coast all along, as the Tyde returns, with a like force as it came in. Which gives us a fair account, both how that *Isthmus* might be washed away; and how that Level might be raised to that height it now is. For no man can doubt (who doth well know the Situation of the Place, and the Nature of the Soil) but that

that all that Level had heretofore been Sea. And, even at this day, it lies so much lower than the Surface of the Sea at High-Water, that it would (much of it) be overflowed every Tyde, if not defended (at a vast charge) by *Dim-church* Wall, for many miles together.

Whether it had a like opportunity of such an In-draught (and in what proportion) on the *French Coast*, I cannot tell. But, that this is the condition of *Romney-Marsh*, no man doubts.

The *Northern Sea*, (between us and *Holland*,) must, in like manner, have beat on the *East-side* of that *Isthmus*, with a like Impetuous Tyde, twice in four and twenty hours. But, being there stopped in its course, would have the like opportunity of discharging itself on the Coast of *Holland*, (as the Western Sea on *Romney-Marsh*.) Whence it is that *Holland* and *Zealand*, which (by the consent of all) is judged to have been once Sea, is now raised, thirty or forty foot higher than it had once been.

And the same *Northern Sea*, which (on this account) hath so large an In-let (Eastward) on the Coast of *Holland*; would (Westward) insinuate itself likewise on the *English Coast*, where-ever it might find low grounds. Which is the case of this large Valley, where now runs the River *Sture*, *Stoure*, or *Esture*; (which name it is supposed to have taken from the Corruption of *Æstuarium*;) for more than twenty miles; (and nothing appears why we should think it had not so done;) entering at the low grounds near *Sandwich* (close by that *Isthmus*) and running up that Level (by *Canterbury*, *Chartham*, *Chilham*, and so forth) as far as *Ashford* or further. Which Valley had once been much Deeper than now it is. For, it seems, that even at *Chartham* (which is now twelve miles from the Sea) the Ground is raised at least seventeen foot; and the Soil, at that depth, found to be of a like condition, as where the Sea is known to have been; And, nearer to the Sea, it may well be presumed to have been yet Deeper.

Which

Which is confirmed (as this Author tells us) by the Reliques of this Marine Animal there found; and by Anchors, and Shells of Fishes, found elsewhere in the Borders of this Valley; at a great depth under ground.

Now, that the Sea may thus raise the ground on such In-draughts, by Sand, Earth and Mud, brought in and lodged there at every Tyde, is not at all unlikely: For we see the same at this day. Particularly; in the Isle of *Oxney* (near adjoining to *Romney-Marsh*) there was a low Level, oft in danger of being overflowed by the River *Rother*. But, somewhat more than threescore years ago, the Sea being let in, hath raised that Level very considerably; by bringing in, and lodging there, a considerable deal of Earth and Mud, every Tyde. But, withal, it hath so fretted the Channel by which it enters and goes out again, that the Chanel by *Rye*, which (within my Memory) was so shallow near (what was called) *Kent-bridge*, that Men and Women were wont to ride through it: But now (by the Tydes entering and returning) that Bridge is long since swallowed up; and the Chanel become so broad and deep, that a Vessel of good burden might ride there at Anchor. A fit resemblance of the Seas fretting this *Isthmus*, and filling up the *Æstuaries* on both sides of it.

The like, in good measure, is to be seen at (what they call) the *Dogger Sands*, which is a Bank of Sands, lying (obliquely) from about the Coast of *Norfolk* (if I do not mistake) toward the Coast of *Zealand*, or North-part of *Holland*. Which is the place where the Northern and Western Tydes (since the Rupture of the *Isthmus*) do now meet, and do there (at still-water, for about an Hour, or at the turning of the Tyde) deposite the Mud and Sand, which (by their rapid motion) is both ways brought thither. Which is supposed to be the true cause of that Sandy Bank. Whether this, in tract of time, may there form a new *Isthmus*, (if the World last long enough) I cannot say. But I am apt to think that the former *Isthmus*, if the Tydes had stopped there, and
had

had not found those In-draughts, on which to lodge what it washed from thence) might have continued, and been more strengthen'd, by what (upon the return of the Tyde) would daily be lodged there.

And upon this account (I think) it is, that the *Isthmus* at *Corinth*, though beat upon by the two Seas (which give it the name of *Bimaris Corinthus*) is not thereby destroyed : because there are not such Tydes to wash it away ; nor such In-draughts, on which to lodge what should be washed from thence.

But the case is much otherwise with this *Isthmus* of ours. Where are all things to countenance this *Hypothesis*. The steep Cliffs at *Dover*, and those at *Calais*, answering directly the one to the other ; and appearing to view, as if, that between them, had been violently torn away. And the Sea between them (even at this day) being much shallower at that place than on either side of it (as *Camden* doth well observe,) which are strong Presumptions, that there had been formerly such a conjunction.

The greatest doubt in this case is, that there is no History extant (that I know) which takes notice of such an *Isthmus*, or such a *Rupture*, in this place, which being a thing remarkable, might have been thought worthy to be reported.

Which yet need not be thought very strange, considering that we have no particular account of the *British* Coast (which might determine this Question) older than the *Romans* access hither with *Julius Cæsar* : Whereas this might have happened many hundreds of years before that time, when though the Island might be known, yet not the particular Coastings of it to the *Greeks* or *Latins*.

But I have this further to say. *Plato* tells us a story (as of a thing which had happened some Ages before his time, and which at that time was in a manner generally forgotten) of an Island some where in the *Atlantick* Ocean, which by a Deluge and Earthquake (in the space of a night and day) was destroyed and swallowed up by the Sea ; whereby that Sea (former-

ly Navigable) was for some time become unnavigable or unsafe, by reason of the Mud and Reliques of that absorbed Island. The words of *Plato* (as translated in *Henry Stephen's* Edition, pag. 25.) runs thus ; *Post autem, quum diluviarum & terræ motuum intemperies extitisset, Unius noctis & diei spatio, omne illud bellicosorum hominum genus in terram absorptum fuit, illiaq; etiam Atlantica Insula* (Ἀτλαντὶς νῆσος) *Maris fluctibus, plane obvoluta disparuit, unde & illud mare trajectu difficile est, quum lutum adhuc copiosum Insulæ istius remanserit.*

Which seems to me very applicable to the Rupture of this *Isthmus* : Whereby this Island was not indeed wholly destroyed ; but was broken off from the Continent, to which it was before united. And, upon such an accident, the Sea must needs be disturbed, and put out of its course, and rendred unsafe for passage, before it came again to be settled. For, though the first Breach might be made in the space of one Night and Day, we cannot suppose the whole Bulk of it, when once broken, was presently carried smooth away ; but first the top or upperpart of it (in a Day and Nights time,) and afterwards the lower parts of it by degrees. Which would render that Sea, if not quite unpassable, at least troublesome and unsafe.

And if in some circumstance, this Narration chance to differ from the matter of Fact, as calling the *Rupture* of this *Isthmus*, the *Subversion* of an *Island*, this must be allowed in the Narrative of an old Tradition from hand to hand. For as such it is there brought in.

For *Plato* doth there introduce *Critias* (then an Ancient man) telling a Story, which (when a Boy ten years old) he had heard from his Grandfather (who was ninety years of age) of what *Solon* (long since dead) had told him ; namely, than an *Ægyptian* Priest had (long before) told *Solon*, that it did appear from some old *Ægyptian* Records (of which the *Greeks* had no knowledge) that such a thing
had

had happened, in an Age so long before, as in comparison, of which *the Greeks were but as Children*. And all this Tradition (through so many hands, and at such great intervals of time) is, at every step, reported from the Relators present memory. And 'tis very possible, that some one or other of these Relators might so far mistake, or misremember, as to call that a *Dissolution* or *Disappearance* of an Island (*ἡφανισμὸς*;) which was but a *Tearing of it from the Continent*.

It serves however to the present purpose, if at least so much of the Story be true, *That long before Plato's time, there had been some such Dissolution or Rupture of an Isle or Isthmus, somewhere in the Atlantick Ocean, (that is, in the Northern Sea) of which there were some symptoms yet remaining in Plato's time*. For, this being admitted, it is as applicable to the present case (as to any we know) of which there are so many Symptoms yet remaining to this day.

I know that *Olaus Rudbeck*, in his *Atlantica* (Cap. 7. § 8. pag. 293.) doth endeavour (in favour of his *Sueonia*) to put an Allegorical sense upon this whole passage.

But I see not why it may not be understood in a plain literal sense, as a true matter of Fact, (though perhaps a little disguised, as was wont to be the fashion (in that Age in relating old stories :) and is very consistent with all that *Rudbeck* cites out of *Plato*, in that whole seventh Chapter of his *Atlantica*.

For the name of the *Atlantick Sea* (wherein this Island is said to be) was not then (nor is now) confined to the Coast of *Sweden*, but extended as far as the *British* Island, and much farther. And when *Rudbeck* tells us out of *Plato*, that the whole *Atlantica* was as big as *Libia* and *Asia* (which whether meant of either of them singly as *Rudbeck* understands it, or of both together, as the words seem to import, *ἡμερῶν ὅσῃ Ἀσία καὶ Λιβύη*, I will not contend;) we cannot suppose it to be *Plato's* meaning, that this whole Region was swallowed up; but rather some small part of it.

from whence perhaps the whole might take its denomination. And though he tells us (from another Writer) that it was *five days Voyage* from the *British* Island, to (that part of) his *Atlantica*, where for *thirty days together the Sun doth not set* ; this hinders not but that the *British* Islands may be part of the *Atlantick Region*, though so far distant from the utmost Northern Cape of it.

This I thought fit to add, in conformity with that of Mr *Camden* in his *Britannia*, and that of this Author, in his *Chartham-News*. And the rather, because this Author seems very desirous, that others would contribute what they know, or have observed, relating thereunto.

I know not, whether I may not yet venture upon one step further. This Author tells us, that this *Æstuary* (from *Sandwich* to *Ashford*) might perhaps flow so much further, as to meet with that *Æstuary* on *Romney Marsh*, and (both being conjoyned) become *one Level*.

There is, I think about 3 or 4 miles distance, between *Ashford* and the nearest part of *Romney-Marsh*. How the intermediate Lands be qualified, I do not well remember.

But, if this be admitted, that the two *Æstuaries* (that of *Stoure* and that of *Romney-Marsh*) in former times may thus have met : This opens a new Scheme, of which before we were not aware. For then we must say, that the two Tydes (that from the North and that from the West) which now meet at the *Dogger Sands*, did then meet at the confluence of these two *Æstuaries*. And then (as was but now said of the *Dogger Sands*) bringing (on both sides) Earth, Mud and Sand to this place, and lodging it there ; might first form an *Isthmus* there, and (by degrees) fill up those *Æstuaries* on both sides. Mean while, washing away that *Isthmus* between *Dover* and *Calais*, and opening a new passage as now it is.

There be many other *Æstuaries* in *England*, where the Sea now enters a great way into the Land ; and, how far
it

it might have entered further in former times, who can tell. As that Sea by *Bristol* between *Wales* and *Cornwall* : That of the *Humber* between *Yorkshire* and *Lincolnshire* : And we may reasonably think, that the *Washes* and the *Fennes* in *Lincolnshire*, may have heretofore been Sea, or overflowed by the Sea at High Tydes : And that of the *Thames* (between *Kent* and *Essex* ;) which now flows (above *London* and *Brentford*) within a mile of *Kingston* (at Spring-Tydes;) it may perhaps seem too daring, to think it may formerly have flowed as far as *Oxford* (between *Shot-over Hill* and *Foxcomb Hill*) and so onward toward *Wallingford* (in the *Romans* time called *Galena*;) but there is this to countenance it, that (if I be not much mis-informed) there be frequently found (in our Stone-Quarries and Gravel-pits) about *Oxford*, Fish Shells, and even the Bodies of Fish Petrified, at great depths under ground ; of which Mr *Lloyd* (who keeps our Repository at *Oxford*) may give (I suppose) a better account than I can. And there have been (no doubt) and now are (in *England*) many other *Æstuaries*, Creeks or Arms of the Sea (entering a great way within Land,) some whereof may be (in a manner) filled up, and become firm Land ; others much narrower, shallower and shorter, than in former times they have been. For it is the nature of *Æstuaries*, where the Tydes flow in, to leave behind them, at their Return, much of Mud, Oase or Sleech (as they call it,) which doth in time come to be firm Land.

But of these I forbear to discourse further, (leaving it to the Sagacity of other inquisitive persons, who may be better acquainted with those parts of the Country, than I do pretend to be :) That of the *Isthmus* between *Dover* and *Calais*, being what I principally intended.

A POST-SCRIPT.

Since mine to you of Sept. 20. (about *Chartham News*) I have been informed from *Canterbury*, That Mr *William Somner* (as I conjectured) was the Author of that Treatise ; that (after his death) it was published by his Elder Brother Mr *John Somner*, in whose Lands the *Bones* and *Teeth* were found ; that figures of all the *Bones* (as well as of the *Teeth*) were then drawn (tho not Printed) and remain now with Mr *Gray*, an Alderman of *Canterbury* ; that those *Bones* and *Teeth* then found, were presented to the *Royal Society*, and are remaining in their Repository at *Greesham Colledge*.

To what I then wrote, you may add this which follows.

At *Hythe* in *Kent* (which is one of the *Cinq Ports*) there was (in our Fathers time) a Convenient Harbour for small Vessels ; which is now swarved up, several attempts have been made to recover the Harbour, but with small success. For when (with great Labour and Charge) they have (in some measure) opened it, it hath soon been filled up again, by what the Sea casts up. And whoever considers the vast quantity of (what they call) *Beach* (that is, a vast multitude of small loose Stones and Fish-shells, cast up by the Sea at *Hythe*, *Lyde*, and elsewhere on the Coast of *Romney-Marsh*, (for divers miles in Length and Breadth, and to a great depth,) will not think it strange, that a *Creek* or *Æstuary* should come in time to be filled up and become firm Land. And in many places of this *Beachy* ground, where (within the memory of persons now living) nothing was to be seen but such loose Stones and Shells (to a great depth,) it comes (by degrees) to be covered with Earth, and becomes Pasture Ground.

On the contrary, that what was formerly Firm-land, may be so destroyed or washed away ; as to become Sea, is evident from (what they call) the *Goodwin-Sands*, on the
Coast

Coast of *Kent* which is said to have been the Lands of Earl *Goodwin* ; but lost by an Inundation about the time that *Tenterden* Steeple was built, (which gave occasion to that Ironical Proverb of things contemporary, that *Tenterden Steeple was the cause of Goodwin Sands.*) The occasion of such different effects, depending on the different situation of the Shores and the setting of the Tydes ; so as to wash off from one place what is lodgeth on other.

And many such alterations (no doubt) have been of the Face of the Earth, all the World over, of which we have no particular Histories. For the World was of a great Age, before the Writing of any Histories (except the Bible) now extant.

And who knows, but that (in former Ages) even amidst the *Alps*, there may have been large *Lakes*, which, in process of time, (by Earthquakes or other Accidents,) may have been drained of their Water, and become fruitful Vallies: of which it is said divers symptoms have been discovered, even amidst the *Alps*, in later Ages.

And something of the like nature hath happened within some few years last past, in *Jamaica*, in *Sicily*, and other places : Of which it were not amiss, (if it be not done already) that particular Narratives were somewhere inserted in your Transactions.